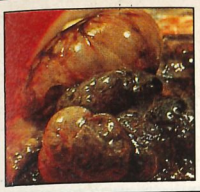

Helping Patients Prevent Weight Gain and Relapse

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ABSTRACT: Weight gain and lack of social support are two major obstacles to long-term success in smoking cessation. Recent evidence suggests that the weight gain may be caused by nicotine withdrawal and its subsequent impact on daily energy expenditure. Lack of social support, especially situations in which a smoker's coworkers or spouse smoke, is strongly correlated with relapse. When counseling these patients, discuss relapse prevention strategies and techniques early on in order to counteract these and other potential barriers to long-term success. Key ingredients for a successful smoking cessation program are constant monitoring, increased physical activity, development of a support system, coping with relapse situations, and regular followup.

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Tobacco advertising has long associated cigarette smoking with a desirable body weight. Since World War II, the tobacco industry has made special attempts to link smoking with thinness, especially among women (eg, "Reach for a Lucky instead of a sweet"). In 1985, 34% of all cigarette advertisements placed in magazines appeared in women's publications.[1] It cannot be inferred that these campaigns are a cause of the current high smoking rate among women, but many physicians note that the fear of gaining weight is the reason women most frequently give for not quitting.

Although several studies (as well as common "wisdom") suggest that people who quit smoking will gain weight,[2] epidemiologic data from the US National Health and Nutrition Examination Survey (NHANES II) suggest that this gain may not be excessive.[3] Ex-smokers of both sexes do not differ significantly from nonsmokers in either caloric intake or body mass index. Thus, even though ex-smokers may think they have gained excessive weight after stopping, they do not, in fact, weigh any more than the nonsmoking cohort.

In another analysis of cross-sectional data,[3] investigators studied age- and height-adjusted weight change since age 25 according to smoking category. Here, again, ex-smokers did not gain significantly more weight than the nonsmoker cohort (an average of 6.5 kg [14.3 lb] compared to 5.8 kg [12.8 lb]). However, current smokers, especially those who had smoked for 21 years or longer, showed significantly less weight change (2.9 kg [6.4 lb] or less) than the ex-smoker and nonsmoker groups. Very little difference in weight gain was seen between current smokers who had smoked for fewer than 20 years and the ex-smokers. These relationships held true for both sexes. Finally, although a few short-term studies suggest that increases in caloric intake among recent ex-smokers may lead to weight gain,[2] smoking cessation per se does not appear to be a major cause of any observed weight differences between smokers and nonsmokers.[2]

Recent studies show that cigarette smoking (specifically, changes in nicotine intake) may alter the metabolic rate and thus play a role in the short-term weight gain observed after smoking cessation.[2] Perkins and associates[4] suggest that this effect may be attributed to the synergistic effects of nicotine intake and low-level physical activity on energy expenditure. By studying three groups in an "at rest" condition, they found that smokers who received a nicotine supplement showed little difference in energy expenditure when compared with smokers given a placebo and with nonsmokers given a placebo.

However, when all three groups engaged in low-intensity physical activity, the energy expenditure of the smokers receiving nicotine significantly increased. The energy expenditure of smokers given placebo did not increase significantly and did not differ from that of nonsmokers.

One implication of this study is that persons exposed to nicotine expend more energy during their normal daily activities than do those not ex-

posed to nicotine. Consequently, even though ex-smokers maintain the same activity level, removal of the nicotine causes a decrease in their total energy expenditure. Therefore, reduced caloric intake or increased physical activity is necessary to counter this physiologic response. Other recent evidence demonstrates that nicotine replacement therapy may have a short-term (up to 10 weeks) effect of suppressing weight gain after smoking cessation.[5]

A variety of sources deal with smoking cessation intervention in medical practice.[6,7] The basic steps include the following:

- Ask all patients whether they smoke, regardless of the reason for their visit.
- Assess each smoker's motivation to quit.
- Advise all smokers to stop.
- Provide self-help materials for smoking cessation. Most patients prefer to quit on their own rather than to join group programs. Contact local chapters of the American Cancer Society, American Heart Association, or American Lung Association for materials (See page 43).
- Follow up on patients regularly, preferably at 2 weeks, 1 month, 3 months, 5 months, and 12 months after the quit date.

MAINTENANCE AND RELAPSE PREVENTION

Although the cessation attempt is relatively straightforward when patients are motivated to quit, data suggest that maintenance strategies and relapse prevention techniques must be considered from the start.

Dealing with patients' preconceptions. Klesges and coworkers[8] report that patients' belief that they would gain weight after cessation adversely affected initial success and, to an even greater extent, was predictive of relapse. In addition, although the number of smokers in a patient's immediate social network (eg, coworkers) was not a factor in the initial quit attempt, it was negatively correlated with the 6-month abstention rate. Thus, in the earliest stages of planning to quit, you must help smokers deal with the belief that they will become "fat and lonely" ex-smokers. Such worries will surely undermine smoking cessation and maintenance efforts.

Other evidence[9] suggests that smokers who successfully quit but whose spouses smoke will be less successful in their attempt and will fail to abstain from smoking over an extended period. In these situations, both husband and wife need to quit smoking together.

Situations that exacerbate relapses. Much interest is focused on situations in which relapse is most likely to occur. When you counsel smokers who are about to quit, such information is particularly helpful so that you can warn them of specific hazardous situations and advise them on how to prepare themselves. Shiffman[10] presents four relapse scenarios:

Upset. The patient feels angry or depressed, usually when at home and often while alone.

Work. The patient becomes tense or anxious at work in the presence of coworkers (who often are smokers themselves).

Social. The patient, along with other smokers, attends a gathering at which alcohol is served. The combination of social cues plus the disinhibitory effects of alcohol set the stage for relapse.

Relaxation. This situation often occurs at home, after eating, and with others present. The patient relaxes to the extent that relapse is facilitated.

Other high-risk relapse situations include negative emotional states, interpersonal conflicts, social pressure, and social modeling.[11] In virtually all of these circumstances, the patient's coping skills are the best predictor of continued abstinence. Nevertheless, there is little consensus concerning the specific coping skills necessary for (or most often associated with) the successful maintenance of smoking cessation. Rather, a matrix of relapse prevention components seems necessary to prepare a patient fully for smoking cessation and long-term maintenance.

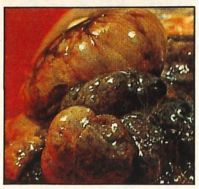
Planning for early maintenance. Four major areas need to be considered before patients plan to stop smoking.[12]

Social support. This has already been noted as an important facilitator for positive outcomes. It is not only necessary to identify potential negative sources of social support (such as a nagging spouse); the patient must also create opportunities to interact with more nonsmoking friends and colleagues.[13] Buddy systems have been used with some success in several smoking cessation programs. Recent quitters can benefit greatly from the support of other ex-smokers; the latter can also model successful maintenance strategies.

Reinforcement strategies. These techniques, especially those that focus on self-reward, lead to improved maintenance rates. Patients may enter into formal contracts with the physician or with significant others (see Dr Shahady's article on page 21). Contracts should contain clearly defined parameters and delineate relatively brief periods between rewards. Thus they can provide tangible recognition of success that is independent of social support.

Coping skills. Your identification of the "best" coping skill does not ensure success; rather, underscore the need to *implement* any coping strategy in the face of a relapse situation (ie, "Do something!"). Emphasize to patients that successful coping with a possible relapse situation owes less to the extensiveness of their coping repertoire than to the use of a few personally meaningful strategies. They must realize that no single strategy is appropriate for all relapse situations.

This is also an appropriate time to confront the issue of weight gain. Pre-



scribe as much increased physical activity as the patient's health status permits in order to cope actively with this potential problem.

Pharmacologic agents. During the early phases, you can prescribe medications such as nicotine gum and clonidine to treat physiologic withdrawal symptoms and, as discussed earlier, possibly for weight suppression. Both you and your patients must recognize, however, that none of these medications constitutes a successful coping strategy in and of itself. Only when it is utilized with other behavioral techniques, such as self-reinforcement and coping skill implementation, can pharmacologic aids work most effectively in insuring long-term maintenance.[14,15]

Planning for later stages. Many patients worry most about their ability to cope with short-term cessation, yet relapse is more likely if they fail to focus on the difficulties of long-term maintenance. They must adopt additional coping strategies during the later period (3 months to 1 year after quitting), and must exercise continuous and increased vigilance to stay smoke-free.[16] Again, this problem reinforces the physician's need to address maintenance concerns during the planning stages of a cessation program, not at the end.

Making changes. A person's attempts to stop smoking and to remain an ex-smoker require changes in lifestyle. New social and health behaviors must be embraced and new reinforcers must be used. Physical activity regimens, relaxation training, and/or healthier nutritional habits not only enhance the patient's feelings of success, they also provide other opportunities for self-reinforcement. However, a person who embarks on all of these changes simultaneously is often less successful in achieving long-term results.

In light of what we now know about smoking cessation, always recommend increased physical activity unless it is contraindicated by a patient's physical condition. Should weight gain become a problem later on, institute more systematic, supervised efforts (for example, weight loss programs and formal exercise classes).

Smoking cessation is not an all-or-nothing phenomenon. More often, smokers usually attempt to quit several times before they stop permanently. Employ the concept of "recycling" in counseling, not only to motivate patients who have previously been unsuccessful, but also as an "inoculation" against potential relapse situations. That is, should ex-smokers become caught up in a situation that starts them smoking again, help them to view this as a temporary setback, rather than as failure. This can facilitate coping strategies that focus on relapse rather than failure.[12]

CONCLUSION

When you are helping patients stop smoking, you can minimize weight gain and other adverse consequences by considering both cognitive and behavioral elements of smoking cessation itself and also of the maintenance process. Smokers who want to stop must understand the following concepts:

- Nonsmoking is a day-by-day decision that requires their consistent monitoring and coping.
- They must consider relapse prevention strategies during the earliest phases of cessation.
- They can help to minimize weight loss by increasing their physical activity, which compensates for the lack of nicotine.
- They must make sure they have appropriate social support to reinforce nonsmoking behavior.
- They must schedule regular followup visits to the physician (or an intermediary) for monitoring, for reinforcing progress, and for help in planning for the future. ■

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